

What is claimed is:

1 1. A circuit board comprising: a dielectric substrate, a grounding surface
2 formed on at least one surface of the dielectric substrate, and transmission lines
3 formed on one surface of the dielectric substrate for transmitting electrical signals,
4 wherein at least a portion of each of the transmission lines is isolated from an upper
5 surface of the dielectric substrate to reduce an effective permittivity between the
6 transmission lines and the grounding surface and reduce dielectric loss.

1 2. The circuit board of claim 1, further comprising a plurality of supporters
2 for supporting the transmission lines, between the dielectric substrate and each of
3 the transmission lines in order to isolate the transmission lines a predetermined
4 interval apart from the upper surface of the dielectric substrate.

1 3. The circuit board of claim 2, further comprising a pad installed at least
2 one end of each of the transmission lines.

1 4. The circuit board of claim 1, further comprising a pad installed at least one
2 end of each of the transmission lines.

1 5. A circuit board comprising: a dielectric substrate, a grounding surface
2 formed on at least one surface of the dielectric substrate, and transmission lines
3 formed on one surface of the dielectric substrate for transmitting electrical signals,
4 wherein at least a portion of each of the transmission lines is isolated from the upper
5 surface of the dielectric substrate to reduce an effective permittivity between the
6 transmission lines and the grounding surface and reduce dielectric loss, and a cap
7 which covers the transmission lines, one end of the cap being grounded to the
8 grounding surface.

1 6. The circuit board of claim 5, further comprising a plurality of supporters
2 for supporting the transmission lines, between the dielectric substrate and each of
3 the transmission lines in order to isolate the transmission lines a predetermined
4 interval apart from the upper surface of the dielectric substrate.

1 7. The circuit board of claim 6, wherein an inside of the cap is in a
2 vacuum state.

1 8. The circuit board of claim 6, further comprising a pad installed at at
2 least one end of each of the transmission lines.

1 9. The circuit board of claim 7, wherein the transmission lines are
2 installed on one surface of the dielectric substrate, the grounding surface is formed
3 on an opposite surface of the dielectric substrate, and a conducting electrode is
4 installed, one end of which is connected to the cap and the other is grounded to the
5 grounding surface through the dielectric substrate so that the cap is grounded to the
6 grounding surface.

1 10. The circuit board of claim 5, wherein an inside of the cap is in a
2 vacuum state.

1 11. The circuit board of claim 5, further comprising a pad installed at at
2 least one end of each of the transmission lines.

1 12. A method of manufacturing a circuit board, comprising:
2 forming a sacrificial layer of a predetermined thickness on a dielectric
3 substrate;

4 forming supporter patterns and transmission lines patterns by patterning the
5 sacrificial layer, and forming supporters and transmission lines in the supporter
6 patterns and transmission line patterns;

7 removing the sacrificial layer so that the transmission lines are isolated from
8 an upper surface of the dielectric substrate; and

9 forming a grounding surface on at least one surface of the dielectric
10 substrate.

1 13. The method of claim 12, wherein forming the supporter patterns and
2 transmission line patterns and the supporters and transmission lines comprises:

3 forming supporter patterns by patterning the sacrificial layer;

forming supporters in the supporter patterns;
forming another sacrificial layer of the sacrificial layer to a predetermined height;
forming transmission line patterns by patterning the other sacrificial layer; and
forming transmission lines in the transmission line patterns.

14. The method of claim 13, further comprising forming a cap for covering the transmission lines, one end of the cap being grounded to the grounding surface.

15. The method of claim 14, wherein an inside of the cap is in a vacuum state.

16. The method of claim 12, further comprising forming a cap for covering the transmission lines, one end of the cap being grounded to the grounding surface.

17. A method of manufacturing a circuit board, comprising:
coating a dielectric substrate with a first polymer to a predetermined height, depositing an adhesive layer and a seed layer on the first polymer, and patterning the seed layer, thereby forming support corresponding regions, pad corresponding regions and ground corresponding regions;

coating the patterned seed layer with a second polymer, and patterning and plating the second polymer, thereby forming a metal layer for transmission lines;

anisotropically etching exposed portions of the first polymer after removing the second polymer and etching the adhesive layer; and

forming supporters by isotropically etching a portion of the first polymer below the metal layer for transmission lines.

18. The method of claim 17, wherein the seed layer is patterned so that the support corresponding regions, the pad corresponding regions and the ground corresponding regions are wider than the metal layer for transmission lines.

19. The method of claim 18, further comprising forming a cap for covering the transmission lines, one end of the cap being grounded to the grounding surface.

1 20. The method of claim 19, wherein an inside of the cap is in a vacuum
2 state.

1 21. The method of claim 17, further comprising forming a cap for covering
2 the transmission lines, one end of the cap being grounded to the grounding surface.